ORIGINAL

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RICHARD W. WIEKING
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NORTHERN DISTRICT OF CALIFORNIA

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

BARRY BONDS,

Defendant.

No. CR 07-0732-SI

EXHIBITS TO UNITED STATES' OPPOSITION TO DEFENDANT'S MOTION IN LIMINE TO EXCLUDE EVIDENCE

Date: February 5, 2009
Time: 10:30 a.m.
Judge: Honorable Susan Illston

[redacted]

EXHIBIT 1

EXHIBIT 1

The following table tracks documents referred to in the defendant's motion by collection date. The ID/donor number comes from the document itself.

Collection Date	ID/Donor # on report	Description	Bates Stamp
2/25/2000	Barry Bonds	St. Joseph's Hospital and Medical Center - blood test result	BB02898
11/28/2000	100121 (identified as the defendant on log[1] seized from Balco)	Quest Diagnostics, Inc. - urine test result - Anabolic Steroid Panel II requested (Positive: Methenolone and Nandrolone)	BB000127
01/19/2001	B, B DOB: 07/24/64	Specialty Lab blood test - Testosterone, Free & Total requested	BB000145
02/05/2001	100145 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. urine test result- Anabolic Steroid Panel II requested (Positive: Methenolone)	BB000129
02/19/2001	100155 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. urine test result- Anabolic Steroid Panel II requested (Positive: Methenolone and Nandrolone)	BB000131
02/20/2001	Barry Bonds	St. Joseph's Hospital and Medical Center -blood test result	BB02955

[1]The admissibility of the log is treated separately under a separate section of this opposition.

07/06/2001	100321 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. urine test result- Anabolic Steroid Panel II requested	BB000133
10/13/2001	100404 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. urine test result- Anabolic Steroid Panel II requested	BB000134
11/08/2001	100424 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. urine test result- Anabolic Steroid Panel II requested	BB000135
11/08/2001	Barry Bonds	Lab One blood test result- Free & Total Testosterone requested	BB000147
11/08/2001	Barry Bonds	Lab One blood test result (same test as above)	BB001585
12/03/2001	Barry Bonds	Lab One blood test result- Blood Chemistry requested	BB001589
01/08/2002	Barry Bonds	Lab One blood test result- Blood Chemistry requested	BB001593
02/26/2002	Barry Bonds	St. Joseph's Hospital and Medical Center -blood test result	BB002900
04/12/2002	Barry Bonds	Lab One blood test result- Blood Chemistry requested	BB001595
12/20/2002	100545 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. -urine test result- Steroid Panel 2 requested	BB000136
02/06/2003	100552 (identified as the defendant on log seized from Balco)	Quest Diagnostics, Inc. -urine test result- Steroid Panel 1 w/nit requested	BB000138

02/23/2003	Barry Bonds	Chandler Regional Lab -blood test result	BB02961
05/28/2003	Barry Bonds	Quest Diagnostics, Inc. urine collection form	BB000753
05/28/2003	Barry Bonds	Quest Diagnostics, Inc. urine test result - BOS Profile I w/nit requested (same test as above)	BB000755
05/28/2003	Barry Bonds	Quest Diagnostics, Inc. urine test result (same test as above)	BB000757-815
05/30/2003	100572 (identified as the defendant on letter seized from Balco)	Quest Diagnostics, Inc. urine test result- Steroid Panel 1 w/nit requested	BB000123
06/04/2003	Barry Bonds	Group Collection Log	BB000712
06/04/2003	Barry Bonds/ Specimen Number 052517, UCLA Code ZZ2315 7H406	MLB/UCLA urine test result (Positive: THG, Clomiphene, exogenous testosterone) (same test as above)	BB000713-23
06/05/2003	100573 (identified as the defendant on letter seized from Balco)	Quest Diagnostics, Inc. urine test result- Steroid Panel 1 w/nit requested	BB000143
08/31/2003	Barry Bonds	St. Joseph's Hospital and Medical Center -blood test result	BB002047
07/07/2006	10001/ Barry Bonds	CDT/INRS urine test result (Positive: D-amphetamine)	BB001895

EXHIBIT 2

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. BARRY BONDS, Defendant.	CR No. 07-00732-SI DECLARATION OF LARRY BOWERS

I, LARRY BOWERS, declare:

1. I am employed as the Chief Science Officer by the United States Anti-Doping Agency (USADA). USADA is a non-profit organization in the United States dedicated to using testing, adjudication, education, and research to deter the use of performance-enhancing drugs in Olympic, Paralympic, and Pan American sport. Among other duties, I am involved in

overseeing the education and research mission of USADA. I have served in this position since approximately September 2000. I was one of the first employees to join USADA following its creation in 2000.

2. By training, I am a chemist. I obtained a bachelor's degree in chemistry in 1972, and a Ph.D. in chemistry in 1975. A copy of my curriculum vitae is attached as an exhibit to this declaration.

3. Prior to working at USADA, I held a position as a professor in the Department of Pathology and Laboratory Medicine at Indiana University Purdue University at Indianapolis (IUPUI) from 1992-2000. In that capacity, I was the director of athletic drug testing and the toxicology laboratory. Prior to my position at IUPUI, I held a position as a professor in the Department of Laboratory Medicine and Pathology at the University of Minnesota from 1978-1992, during which time I also was associate director of the clinical chemistry laboratory for the University of Minnesota Hospitals. I also worked for two years at a postdoctoral fellow at the University of Oregon Health Sciences Center, where I worked in a clinical laboratory. I was certified by the American Board of Clinical Chemistry in the areas of clinical chemistry and toxicology.

4. During my career in academia and while at USADA, I have conducted or overseen research on performance-enhancing drugs, including testosterone, human growth hormone, erythropoietin, and other drugs, and the way the body metabolizes drugs. Through my research and experience, I have become familiar with the physiological results of taking anabolic steroids and other performance-enhancing drugs in terms of their impact on a person's physique, blood, and urine. I have become familiar with the phenomena of testosterone/epitestosterone suppression.

5. As a part of my position at USADA, I routinely attend conferences on the latest developments in the field of detecting, deterring, and researching performance-enhancing drugs in sport. To my best ability, I review current scientific literature and publications in the field of performance-enhancing drugs and efforts to keep them out of sport. I have testified on behalf of USADA as an expert on many occasions at disciplinary hearings for athletes suspected of using performance-enhancing drugs. I also have been qualified in federal court as an expert in the area of performance-enhancing drugs, and testified pursuant to that qualification in a federal criminal trial in 2008. The case was *United States v. Graham*, CR 06-0725-SI.

6. Based upon my experience and training, my review of peer-reviewed scientific literature, my ongoing professional communications with scientists in the anti-doping community, and my own research, the following statements are accepted tenets of anti-doping science which are based on reliable scientific principles:

a. Testosterone, human growth hormone (HGH), insulin, and erythropoietin (EPO), are performance-enhancing substances.

b. Testosterone is a chemical that causes muscle growth and retention of muscle. It can make a person stronger and it can benefit a person's ability to recover, i.e. it can enable a person to work muscles more often and harder than without the assistance of testosterone. Exogenous, or foreign testosterone, can cause a variety of physiological effects in a person, including acne, physiological effects to the genitalia, an ability to rapidly increase muscle mass, and other effects.

c. HGH can cause changes to the body by itself or, in connection with other substances, e.g. anabolic steroids and insulin, that can be responsible for the growth of a large number of bodily systems, e.g. muscles and bones. Similar to testosterone, HGH can enhance athletic performance by promoting muscle growth and speeding recovery time for muscles after they have been utilized.

d. Insulin is a chemical that assists the body to get sugar and other constituents into the cell. As a performance-enhancing substance, insulin is used to regenerate energy stores in the cell and to prevent muscle breakdown. Insulin is frequently used in conjunction with another substance, such as HGH. HGH increases muscle growth while insulin decreases muscle breakdown, resulting in faster recovery and more muscle accumulation than either substance alone.

e. EPO is a hormone that regulates the number of red blood cells in the blood system. If EPO in addition to the amount naturally produced by the body is administered into the body, it can increase the number of red blood cells in a body's blood system. The performance-enhancing aspect of such an effect is that a body is thereafter able to better transport oxygen to muscles, which can make the muscles more effective in making energy. The benefits of EPO are that a person may experience improved endurance and energy. EPO can enhance a person's ability to train for athletic performances and to perform in athletic competitions.

7. In addition, I am aware from my experience at USADA that it is illegal to distribute and obtain the substances identified herein for performance-enhancement and without a legitimate medical condition requiring such a substance and a prescription from a physician. Examples of legitimate medical conditions related to each substance are as follows: muscle-wasting conditions associated with AIDS (testosterone); growth deficiencies in children (HGH); Type I diabetes (insulin); and anemia-related conditions associated with cancer (EPO). The substances are also illegal in that they are contained on the list of drugs banned in sport, such as the World Anti Doping Agency prohibited list.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge at Colorado Springs, Colorado on January 26, 2009.

Larry D. Bowers
Chief Science Officer
United States Anti-Doping Agency

Larry D. Bowers, Ph.D., DABCC
Senior Managing Director
United States Anti-Doping Agency
Colorado Springs, CO 80906
(719)-785-2003

Education:

Franklin and Marshall College, Lancaster, PA. B.A. (Chemistry), 1972.

University of Georgia, Athens, GA. Ph.D. (Chemistry), 1975.

University of Oregon Health Sciences Center, Portland, OR. Postdoctoral study, 1975-1977.

Experience:

United States Anti-Doping Agency
SENIOR MANAGING DIRECTOR, TECHNICAL AND INFORMATION RESOURCES, September, 2000.

Indiana University Purdue University at Indianapolis
PROFESSOR, Department of Pathology and Laboratory Medicine, 1992-2000.
DIRECTOR, Athletic Drug Testing and Toxicology Laboratory, 1992-2000.
PROFESSOR, Department of Chemistry, Purdue University School of Science at Indianapolis, 1993-2000.

Visiting Associate Professor, Cornell University, Equine Drug Testing and Toxicology Mass Spectrometry Facility, March - June, 1987.

University of Minnesota, 1978-1992.
PROFESSOR, Department of Laboratory Medicine and Pathology, 1988 - 1992.
ADJUNCT PROFESSOR, Department of Chemistry, 1984-1992
Facility manager, Health Sciences Mass Spectrometry Resource, 1981-1992
Member, University of Minnesota University-Industry Cooperative Research Center for Biocatalytic Process Technologies, 1984-1992

Postdoctoral Training, University of Oregon Health Sciences Center (1975 - 1977).

Service Responsibilities:

Director, Athletic Drug Testing and Toxicology Laboratory, Indiana University (1992-2000).

Assistant Director, Clinical Chemistry Section, University of Minnesota (1988-1992)

Director, Drug Analysis Laboratory, Clinical Chemistry Section, University of Minnesota (1980-92).

Distinctions:

World Anti-Doping Agency
Member, Independent Observer team, Sydney Olympic Games, 2000
Member, Standards and Harmonization Committee, 2000 – present
Chairman, Laboratory Accreditation Subcommittee, 2001 – present

Member, Working Group on Identification of Substances by GC/MS, LC/MS, and MS/MS. US Substance Abuse and Mental Health Services Administration (SAMHSA), September, 2000.

Consultant, US Food and Drug Administration, Medical Devices Advisory Committee, 2000–present.

Chairman, Subcommittee on GC/MS Standards, National Committee for Clinical Laboratory Standards, 1995–present

Deputy Director, Anti-Doping Laboratory, Pan American Games, Montreal, Quebec, Canada, July 1999.

Deputy Director, Athletic Drug Testing Laboratory, XXV Olympic Games, Atlanta, GA, July 1996.

American Board of Clinical Chemistry – Certificate in Toxicological Chemistry #101, 1994; Certificate in Clinical Chemistry #562, 1979.

Laboratory Director Certificate of Qualification (#B10438), New York State Department of Health, 1994.

Clinical Chemistry
Associate Editor, Toxicology/Therapeutic Drug Monitoring, 1994-2000
Board of Editors, 1988-1994, 2000-present

Faculty, Advanced Analytical Techniques, Advanced Toxicology Workshop, American Association for Clinical Chemistry, Baltimore, MD, June, 1998; Alexandria, VA, 2000.

Chairman, Midwest Association of Toxicology and Therapeutic Drug Monitoring (MATT) annual meeting, Indianapolis, IN, April, 1997.

Chairman, 18th International Symposium on Column Liquid Chromatography, Minneapolis, MN, May, 1994.

Associate member, Commission on Nomenclature, Properties, and Units, International Union of Pure and Applied Chemistry, 1995 - present.

Representative, Joint Committee on Education in Toxicology (AACC; SOFT; CAT), 1996-1999.

Award for Outstanding Contributions to Clinical Chemistry in a Selected Area of Research, American Association for Clinical Chemistry, 1990.

Board of Editors, ***Therapeutic Drug Monitoring,*** 1992-present.

Faculty Member, AACC course ***Professional Practice in Toxicology: A Review***, Cincinatti, OH, June 21-25, 1992; June 21-25, 1993; June 20-24 1994; and June 23-26, 1996.

Board of Directors, American Association for Clinical Chemistry, 1989-1991.

Board of Directors, American Board of Clinical Chemistry, 1985-91.

Co-chairman, Selected Topics, AACC/CSCC/IFCC International Meeting. San Francisco, CA, July,1990.

National Science Foundation Special Molecular Sciences Review Panel, NSF Science and Technology Center Initiative, April, 1988.

Leroy Sheldon Palmer Award in Chromatography, Minnesota Chromatography Forum, 1985.

SELECTED RESEARCH PUBLICATIONS, REVIEWS, AND CHAPTERS (of 114 Total Publications)

L.D. Bowers, "Abuse of performance enhancing drugs in sport." Ther. Drug Monit. 2002; 24: 178-81.

L.D. Bowers and D.J. Borts, "Direct measurement of testosterone and epitestosterone conjugates in urine with HPLC/MS/MS." *J. Mass Spectrom.* 2000; **35**: 50-61.

L.D. Bowers, R.S. Black, and D.J. Borts, "Athletic Drug Testing: An Analyst's View of Science and the Law." Ther. Drug Monit. 2000; 22: 98-102.

R.S. Black and L.D. Bowers, Mass spectrometric characterization of the β -subunit of human chorionic gonadotropin," in ***Protein and Peptide Analysis: New Mass Spectrometric Applications***, J.R. Chapman, ed., (Humana Press, Towanda, NJ, 2000) 337-54.

L.D. Bowers, "Oral dehydroepiandrosterone supplementation can increase the testosterone/epitestosterone ratio." Clin Chem 1999; 45: 295-297.

L.D. Bowers, "Anabolic agents and sports."*Therapeutic Drug Monitoring and Toxicology* 1998; 19: 303-19. (American Association for Clinical Chemistry continuing education peer-reviewed publication).

L.D. Bowers, "Athletic Drug Testing,"*Clinics in Sports Medicine* 1998; 17: 299-318.

D.A. Ullman, L.D. Bowers, and C.A. Burtis, "Chromatography," in ***Teitz Textbook of Clinical Chemistry, 3rd ed,*** C.A. Burtis and E. Ashwood, eds., (Saunders, Philadelphia, 1998) 164-204.

L.D. Bowers, "Analytical goals in therapeutic drug monitoring." *Clin. Chem.* 1998; **44**: 375-80.

L.D. Bowers, "Analytical advances in detection of performance-enhancing compounds." *Clin. Chem.* 1997; **43**: 1299-1307.

C. Liu and L.D. Bowers, "Mass spectrometric characterization of nicked fragments of the β-subunit of human chorionic gonadotropin" *Clin. Chem.* 1997; **43**: 1172-81.

L.D. Bowers and D.J. Borts, "Evaluation of selected ion storage ion trap mass spectrometry for detection of urinary anabolic agents." *Clin. Chem.* 1997; **43**: 1033-40

C. Liu and L.D. Bowers, "Mass spectrometric characterization of the β-subunit of human chorionic gonadotropin" *J. Mass Spectrom.* 1997; **32**: 33-42.

L.D. Bowers and D.J. Borts, "Separation and confirmation of anabolic steroids with quadrupole ion trap tandem mass spectrometry."*J. Chromatogr.* 1996; **687**: 69-78.

C. Liu and L.D. Bowers, "Immunoaffinity trapping of urinary human chorionic gonadotropin and its high-performance liquid chromatographic-mass spectrometric confirmation."*J. Chromatogr.* 1996; **687**: 213-220.

L.D. Bowers, and Sanaullah, "Direct measurement of steroid sulfate and glucuronide conjugates with high-performance liquid chromatography-mass spectrometry." *J. Chromatogr.* 1996; **687**: 61-68.

Sanaullah and L.D. Bowers, "Facile synthesis of [16,16,17-$^2H_3$]-testosterone and -epitestosterone and their glucuronides and sulfates." *J. Steroid Biochem. Molec. Biol*. 1996; **58**: 225-34.

L.D. Bowers, "Coupled Mass Spectrometric-Chromatographic Systems," in ***Handbook of Analytical Toxicology***, S. Wong and I. Sunshine, eds., (CRC Press, Boca Raton, 1996), 173-199.

D.A. Ullman, L.D. Bowers, and C.A. Burtis, "Chromatography," in ***Teitz Fundamentals of Clinical Chemistry, 4th ed,*** C.A. Burtis and E. Ashwood, eds., (Saunders, Philadelphia, 1996), 105-123.

W.C. Buss and L.D. Bowers, "The dose-dependent inhibition of rat renal translation elongation seen after *in vivo* cyclosporin A is not caused by cyclosporin metabolites." *Toxicology* 1995; **100**: 17-25.

S. Weisdorf, K. Hendrich, H. Liu, J. Wike, H. Merkle, L. Bowers, K. Ugurbil, " An *in vivo* ^{31}P magnetic resonance scpectroscopy study of uridine excess in rats fed orotic acid." *Biochem. Molec. Med.* 1995; **54**: 43-52.

M.A. Lacerda, L.D. Bowers, D.C. Snover, W.D. Payne, and J.R. Bloomer, "Hepatic levels of Cyclosporine and metabolites in patients after liver transplantation." *Clin Transplantation* 1995; **9**: 35-38.

S.A. Gruber, J. Hewitt, A.L. Sorenson, D.L. Barber, L.D. Bowers, G. Rynders, L. Arrazola, A.J. Matas, M.E. Rosenberg, and D.M. Canafax, "Pharmacokinetics of FK-506 following intravenous and oral administration in patients awaiting renal transplantation." *J. Clin. Pharmcol.* 1994; **34**: 859-64.

D.A. Whitman, V. Abbott , K. Fregien, and L.D.Bowers, "Recent advances in HPLC/MS and HPLC/MS/MS: Detection of Cyclosporine and metabolites in kidney and liver tissue." *Ther Drug Monit* 1993; **15**: 552-6.

W.D. Branton, M.S. Rudnick, Y. Zhou, E.D. Ecleston, G.B. Fields, L.D. Bowers, "Fatty acylated toxin structure" *Nature* 1993; **365**: 496-7.

D.J. Waters, L.D. Bowers, R.J. Cipolle, D.D. Caywood, R.L. Bill, "Plasma salicylate concentrations in immature dogs following aspirin administration: Comparison with adult dogs." *J Vet Pharmacol Ther.* 1993; **16**: 275-82.

L.D. Bowers, D.A. Ullman, and C.A. Burtis, "Chromatography," in ***Teitz Textbook of Clinical Chemistry, 2nd ed,*** C.A. Burtis and E. Ashwood, eds., (Saunders, Philadelphia, 1993), 206-255.

I. Fu and L.D. Bowers, "Micro-quantitation of Cyclosporine and its metabolites and determination of their spectral absorptivities." *Clin. Chem.* 1991; **37**: 1185-1190.

J.A. Halikas, R.D. Crosby, G.A. Carlson, F. Crea, N.M. Graves, and L.D. Bowers, "Cocaine reduction in unmotivated crack users using carbamazepine versus placebo in a short term, double-blind crossover design." *Clin. Pharm. Ther.* 1991; **50**: 81-95.

L.D. Bowers, "Therapeutic monitoring of cyclosporine: Difficulties in establishing a therapeutic window." *Clin. Biochem.* 1991; **24**: 81-8.

R. Yatscoff, T.G. Rosano, and L.D. Bowers, "Clinical significance of cyclosporine metabolites." *Clin. Biochem.* 1991; **24**: 23-36.

L.D. Bowers, "Cyclosporine analysis by HPLC: Precision, accuracy, and minimum detectable quantity." Transpl. Proc. 1990; **22**: 1150-1154.

L.D. Bowers, D.D. Norman, X.-x. Yan, D. Scheeler, and K.L. Carlson, "Isolation and structural identification of ^{9}hydroxy- ^{9}desmethyl-cyclosporine." Clin. Chem. 1990; **36**: 1875-1879.

S. Pedigo and L.D. Bowers, "Solvatochromic comparison of alkyl-silica-based and polystyrene-divinylbenzene reversed phase columns." J. Chromatogr., 1990; **499**: 279-290.

P.O. Edlund, L.D. Bowers, T. Covey, and J.D. Henion, "Rapid determination of dianabol in equine urine by isotope dilution liquid chromatography tandem mass spectrometry." J. Chromatogr., 1989; **497**: 49-57.

L.D. Bowers, "High performance liquid chromatography/mass spectrometry: State of the art for the drug analysis laboratory." Clin. Chem. 1989; **35**: 1282-1287.

P. O. Edlund, L.D. Bowers, and J.D. Henion, "Determination of dianabol and its metabolites in equine plasma and urine by coupled-column liquid chromatography and tandem mass spectrometry," J. Chromatogr., 1989; **487**: 341-356.

P.W. Carr and L.D. Bowers, ***Immobilized Enzymes in Analytical and Clinical Chemistry: Applications and Fundamentals*** (Wiley-Interscience, New York, 1980), 1-460.

R.S. Black and L.D. Bowers, Evidence for partial glycosylation of O-linked sites in the β-subunit of human chorionic gonadotropin. *J. Mass Spectrom.* 1999; In preparation.

SELECTED PRESENTATIONS AT SCIENTIFIC MEETINGS

L.D. Bowers, "Mass Spectrometry in Clinical Diagnosis of Disease," American Association for Clinical Chemistry, San Francisco, CA, July, 2000.

L.D. Bowers, "Testing for Performance Enhancing Drugs in Sports," American Society of Clinical Laboratory Scientists, San Francisco, CA, July, 2000.

L.D. Bowers, "Analytical Toxicology Issues in the Fight Against Drugs in Athletics" University of Utah, Salt Lake City, UT, May, 2000.

L.D. Bowers, "LC/MS/MS in Clinical Toxicology," Analytica Congress, Munich, Germany, April, 2000.

L.D. Bowers, "Detection of Performance-enhancing Drugs in Athletics: An Analytical Adventure" University of Saarland, Homburg/Saar, Germany April, 2000.

L.D. Bowers, "Dietary Supplements: What's Going on Out There?" Indiana Athletic Trainers Association, Indianapolis, IN, October, 1999.

L.D. Bowers, "Athletic Drug Testing - An Analysts View of Science and the Law", 6th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Cairns, Australia, September, 1999

L.D. Bowers, HPLC/MS/MS Workshop, 6th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Cairns, Australia, September, 1999

L.D. Bowers, "Detection of Performance-enhancing Drugs in Athletics: An Analytical Adventure" Miami University (Ohio), OH, February, 1999.

L.D. Bowers, "" Plenary lecture; Mass Spectrometry in Clinical Diagnosis of Disease, 11th American Society for Mass Spectrometry Sanibel Conference, Sanibel Island, FL, January, 1999.

L.D. Bowers, "Athletes, Drugs and the Courts: An Analyst's Perspective" Ball State University, February, 1998.

L.D. Bowers, "Athletes, Drugs and the Courts: An Analyst's Perspective" Indiana Section, American Chemical Society, Indianapolis, IN February, 1998.

L.D. Bowers, "Drug Testing and the Elite Athlete" New York State Academy of Family Physicians Annual Meeting, Lake Placid, NY, January, 1998.

L.D. Bowers, "Applications of Chromatography/MS/MS in Toxicology." 5th International Congress of Therpaeutic Drug Monitoring and Clinical Toxicology, Vancouver, BC, Canada, November, 1997.

L.D. Bowers, "Why Sample Spectra and Library Spectra Don't Match: An Overview of Mass Spectral Interpretation and Library Searching" (Workshop) Society of Forensic Toxicologists Meeting, Salt Lake City, UT, October, 1997.

L.D. Bowers, "Studying Phase II Metabolism of Steroids with HPLC/MS/MS" (Workshop) Society of Forensic Toxicologists Meeting, Salt Lake City, UT, October, 1997.

L.D. Bowers, "Analytical Goals in Therapeutic Drug Monitoring" American Association for Clinical Chemistry Annual Meeting, Atlanta, GA, July, 1997.

L.D. Bowers, "Forensic Urine Drug Testing/Doping Control in Sports Medicine: Tandem Mass Spectrometry for Steroid Drug Analysis." Pittsburgh Conference, Atlanta, GA, March, 1997.

L.D. Bowers and Sanaullah, "Direct Measurement of Testosterone and Epitestosterone Glucuronides and Sulfates by HPLC/MS/MS." Society of Forensic Toxicologists, Denver, CO, October, 1996.

L.D. Bowers, "Decreasing the Detection Threshold: Application of GC/ and HPLC/Mass Spectrometric Techniques." International Federation of Clinical Chemistry, London, England, July, 1996.

L.D. Bowers, "Endocrine System Manipulation in Athletes." 31st Academy of Clinical Laboratory Physicians and Scientists meeting, St. Louis, MO, June, 1996

L.D. Bowers, "Detection of Endocrine System Manipulation in Athletes." Medical College of Virginia, Richmond, VA, April, 1996.

L.D. Bowers, "Detection of Endocrine System Manipulation in Athletes." University of Utah, Salt Lake City, UT, April, 1996.

L.D. Bowers, "Analytical Challenges in Athletic Drug Testing for International Competition," (Keynote Speaker), Minnesota Chromatography Forum, Minneapolis, MN, April, 1996.

L.D. Bowers "Fundamentals of Quadrupole Ion Traps" 14th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1996.

L.D. Bowers "Ion Trap MS/MS for Confirmation of Anabolic Steroids" 14th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1996.

L.D. Bowers "Confirmation of hCG in Urine using Imumunoaffinity Extraction and HPLC/MS" 14th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1996.

L.D. Bowers, Sanaullah, "HPLC/MS Measurement of Steroid Sulfates and Glucuronates", 4th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Vienna, Austria, September, 1995.

L.D. Bowers, C. Lui, "An HPLC/Mass Spectrometric Method for Confirmation of HCG in Urine", Third IOC World Congress on Sport Sciences, Atlanta, GA., September 1995.

L.D. Bowers, Sanaullah, "Direct Measurement of Testosterone and Epitestosterone Glucuronate and Sulfate with HPLC/MS", Third IOC World Congress on Sport Sciences, Atlanta, GA, September 1995.

L.D. Bowers, "Ion Trap MS and MS/MS in Toxicological Analysis", 4th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology, Vienna, Austria, September, 1995.

L.D. Bowers, "Selected Ion Storage and Tandem Mass Spectrometry for the Analysis of Anabolic Steroids.", 1995 Annual Meeting of the American Association for Clinical Chemistry, Anaheim, CA, July, 1995.

L.D. Bowers, "Methods for Detection of Endocrine Manipulation in Athletes." Clinical Chemistry Visiting Professor Program, Washington University, St. Louis, MO, June, 1995.

L.D. Bowers, "Beating a Urine Drug Test: From Aspirin to Urinaid." National Athletic Trainers Association National meeting, Indianapolis, IN, June, 1995.

L.D. Bowers, "Characteristics of a Good Drug Testing Program: From Collection to Interpretation." NCAA Crew Chiefs meeting, Bar Harbor, ME, June, 1995.

L.D. Bowers, "Detection of Endocrine System Manipulation in Athletes." Pathology Department Laboratory Rounds, University of Wisconsin, Madison, WI, May, 1995.

L.D. Bowers, "Characterization of human Chorionic Gonadotropin Using HPLC/MS" 43rd ASMS Conference, American Society for Mass Spectrometry, Atlanta, GA, May, 1995.

L.D. Bowers, and Sanaullah "Direct Measurement of Steroid Glucuronides and Sulfates with HPLC/MS", 43rd ASMS Conference, American Society for Mass Spectrometry, Atlanta, GA, May, 1995.

L.D. Bowers, "Selected Ion Storage and Tandem Mass Spectrometry of Anabolic Steroids", 43rd ASMS Conference, American Society for Mass Spectrometry, Atlanta, GA, May 1995.

L.D.Bowers, "Ion Trap GC/MS and GC/MS/MS Measurement of Cocaine and its Metabolites", 43rd ASMS Conference, American Society for Mass Spectrometry, Atlanta, GA, May, 1995.

L.D. Bowers, "Drug analysis in athletics: Pushing the limits of LC and CE/MS." Perkin Elmer Symposia, April 1995.

Sanaullah and *L.D. Bowers*, "Direct measurement of testosterone and epitestosterone glucuronate and sulfate." 13th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1995.

L.D. Bowers and J. Baenziger, "Systematic investigation of urine manipulation agents: Aspirin, phenylbutazone, penicillin and ampicillin." 13th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1995.

L.D. Bowers "Analysis of anabolic steroids on the ion trap: Selected ion storage and non-resonant and resonant MS/MS" 13th Cologne Workshop of Doping in Sport, Cologne, Germany, March, 1995.

EXHIBIT 3

Academic Curriculum Vitae

DON H. CATLIN, M.D.

COMMUNICATIONS:

Telephone:	ADR 310-482-6925 (messages taken at UCLA 310-825-2635)
Facsimile:	ADR 310-482-6929
Emails:	dcatlin@antidopingresearch.org or dcatlin@ucla.edu
Web site	www.antidopingresearch.org
Address:	Anti-Doping Research 3873 Grand View Blvd. Los Angeles, Ca. 90066

PERSONAL HISTORY:

Address:	12415 Rochedale Lane, Los Angeles, CA. 90049
Date of Birth:	June 4, 1938 Connecticut
Marital status:	Widowed, 1989
Children:	Bryce 1974, Oliver 1976

EDUCATION and TRAINING:

Yale University	B.A.	1960
University of Rochester School of Medicine	M.D.	1965
University of California Los Angeles Department of Medicine	I Internship II Residency	1965-1966 1966-1967
University of Vermont Department of Medicine	III Residency	1967-1968

EDUCATION and TRAINING: (continued)

University of California, Los Angeles Department of Medicine	IV Residency Chief Resident	1968-1969

PRESENT POSITIONS: UNIVERSITY OF CALIFORNIA, LOS ANGELES

Professor of Molecular and Medical Pharmacology	2002 - 2007 -
Professor Emeritus of Molecular and Medical Pharmacology	2007 -
Founder and Director, UCLA Olympic Analytical Laboratory	1982 - 2007

PRESENT POSITIONS: LOCAL, NATIONAL AND INTERNATIONAL

Anti-Doping Research Institute (Not for Profit)	
President	2006
International Olympic Committee (IOC)	
Member, Medical Commission	1989 -
Chair, Science and Medicine Committee	2003 -
World Anti-Doping Agency (WADA)	
Laboratory Director	2000 - 2007
Member Medicine and Science Committee	2006 - 2008
Los Angeles Sheriffs Department, Medical Review Officer	1991 -

CERTIFICATION:

License to Practice Medicine:	California	1965-
	Vermont	1967 - 1990
	District of Columbia	1968 - 1980

Diplomate: American Board of Internal Medicine Board Certified, Internal Medicine	1970

UCLA OLYMPIC ANALYTICAL LABORATORY CERTIFICATION:

The International Olympic Committee	1983 -
College of American Pathologists	1993-2001
International Organization for Standardization (ISO)	1999 -

UCLA OLYMPIC ANALYTICAL LABORATORY CERTIFICATION: (continued)

U.S. Department of Defense 2000 -

World Anti-Doping Agency (WADA) 2004 -

PAST ACADEMIC POSITIONS:

University of California, Los Angeles

Department of Medicine
Assistant Professor 1972-1979
Associate Professor 1979-2001

Department of Pharmacology
Assistant Professor 1972-1979
Associate Professor 1979-2001

PAST POSITIONS:

United States Army Medical Corps 1969-1972

Walter Reed Army Institute of Research, Washington, D.C.,
Captain 1969-1970, Major (retired, 1972)
Department of Medicine, Gastroenterology

District of Columbia, Department of Health

Director, Substance Treatment Clinic 1971-1972

University Committees

Physicians Health Committee, UCLA Medical Center 1991 - 2007

International Federation of Clinical Chemistry:

Committee on Laboratory Analysis of Drugs of Abuse, Chairman 1988-1996

International Olympic Committee

Subcommission on Out-of-Competition Testing. 1991-1999
Various working groups

PAST POSITIONS (continued):

United States Olympic Committee

Committee on Substance Abuse, Research and Education

Founding Chairman	1985-1989
Member	1989-2000
International Doping Control Working Group, U.S. representative.	1987-1999
Soviet-American Joint Drug Education & Anti-doping Commission	1988-1992

National Collegiate Athletic Association:

Various committees	1985-2001
Council of Europe, Invited Delegate:	1987-1994

PROFESSIONAL ACTIVITIES: PAST MEMBERSHIP

The Androgen Society

California Medical Association

Western Society for Clinical Research

American Association for the Advancement of Science

American Chemical Society

International Federation of Clinical Chemistry

American Association for Clinical Chemistry

U.S. Pharmacopeial Convention

PROFESSIONAL ACTIVITIES: ad hoc CONSULTANT

Editorial Service: Various scientific journals including: JAMA, Nature, Steroids, J Clinical Endocrinology and Metabolism, and J Mass Spectrometry

Editorial Board: The Georgia Tech Sports Medicine and Performance Newsletter
Drugs and sport reviewer for Clinical Chemistry, Nature and others

PROFESSIONAL ACTIVITIES: ad hoc CONSULTANT (continued)

National Institute on Substance Abuse
Health and Human Services
Food and Drug Administration
Office of National Drug Control Policy
Drug Enforcement Agency
Department of Justice
Armed Forces Institute of Pathology

State of California: Department of Alcohol and Drug Programs, Health and Welfare Agency
Department of Health Services, Board of Medical Quality Assurance
California Horse Racing Board
State Compensation Insurance Fund, Department of Justice
Department of Education
Lawrence Livermore Laboratories

City of Los Angeles: Chief Medical Examiner-Coroner
City Attorney's Office
Los Angeles Police Commission

Sport Organizations: National Collegiate Athletic Association

United States Olympic Committee and all USOC National Sport Governing Bodies such as USA Track and Field

International Sport Federations, various and including: International Amateur Athletic Federation, Cycling (UCI), soccer (FIFA)

National Football League

National Strength and Conditioning Association

Various colleges and universities

Major Media Consultant on Drugs and Sport:

New York Times; Washington Post; Los Angeles Times; British Broadcasting Corporation; London Times; Sports Illustrated; ABC, CBS, and NBC Sports; Turner Sports; ESPN Sports; Time, National Public Radio, and others.

HONORS AND SPECIAL AWARDS:

Alpha Omega Alpha Honor Medical Society 1965

HONORS AND SPECIAL AWARDS: (continued)

International Olympic Committee:

Distinguished Sports Medicine Physician Award 1989

National Strength and Conditioning Association:

Presidents Award 1990

Los Angeles Times

100 Most Influential Persons in Sport 1990

American Society of Mass Spectrometry

Plenary Speaker 1995
Plenary Speaker 2005

Sportsman of the Year, 2003
Chicago Tribune 2003

INVITED LECTURES: INTERNATIONAL AND NATIONAL, since 1990

Main Topics: 1. Clinical Uses of Anabolic Androgenic Steroids; 2. Adverse Effects of Anabolic Steroids; 3. Testing for Anabolic Steroids; 4. Antidoping Activities in the U.S.; 5. Carbon Isotope Ratio Techniques; 6) Pharmacology of Drugs of Abuse; 7) Tetrahydrogestrinone.

American Society of Addiction Medicine, Annual Meeting. Boston, MA November, 1990.

Council of Europe, U.S. delegate. Anti-doping Convention. Strasbourg, France. June, 1991.

National Collegiate Athletic Association (NCAA). Annual Conference for Physicians. Sun Valley, Idaho. June 24, 1991.

U.S. Drug Enforcement Agency - Symposium on Anabolic steroids. Boston, MA. July 1991.

Surgeon General: U.S. Department of Defense. Fort Sam Houston, Texas. August, 1991.

Third Permanent World Conference on Drugs in Sport. Bergen, Norway. September, 1991.

American Society of Addiction Medicine. Cleveland, Ohio. April, 1991.

Keynote Speaker: Analytical Considerations in doping Control in Olympic and Sports Medicine.
Federation for Analytical Chemistry and Spectroscopy Society. Anaheim, CA. October, 1991.

INVITED LECTURES: INTERNATIONAL AND NATIONAL, since 1990 (continued)

United States Olympic Committee: Olympic Congress of the USA. Colorado Springs, Co. November, 1991.

Soviet Sportsmedicine in cooperation with Soviet-American Joint Commission on Drug Abuse. Moscow, Soviet Union December 1991.

Pittsburgh Conference. (GC-MS of Anabolic Steroids) New Orleans, LA. March, 1992.

National Football League. Washington, D.C. and Denver, CO. May, 1992.

Federal Bureau of Investigation. Toxicology Symposium. Quantico, VA. June, 1992.

Council of Europe, Anti-Doping Convention. Strasbourg, France. December, 1992.

Central American Caribbean Scientific Congress. San Juan, Puerto Rico. March, 1993.

Symposium: Control of Doping with Anabolic Steroids. London, U.K. September, 1993.

Fourth Permanent World Conference on Anti-doping in Sport. London, UK. September, 1993.

Centenial of the International Olympic Committee. Paris, France. August, 1994.

Royal Pharmaceutical Society of Great Britain. 131st British Pharmaceutical Conference. London, England. September, 1994.

Second International Androgen Workshop. Agency for International Development. Long Beach. February 1995.

XIIth Doping Control Seminar. Cologne, Germany March, 1995.

Plenary Speaker: American Society of Mass Spectrometry. Atlanta, Georgia. May, 1995.

Seminar, Hewlett Packard. Palo Alto, CA. May, 1995.

National Association of Athletic Trainers. Indianapolis, In. June, 1995.

University of Oregon. Ashland, Oregon August, 1995.

Australian Society of Mass Spectrometry. University of New South Wales, Sidney, Australia September, 1995.

World Congress of Sports Medicine. Atlanta, Georgia. September, 1995.

INVITED LECTURES: INTERNATIONAL AND NATIONAL, since 1990 (continued)

University of Rochester, October, 1995.

HPLC Annual Meeting, keynote speaker, May, 1996.

XVIth World Congress of Clinical Chemistry. London, UK. July, 1996.

American College of Sports Medicine, June, Orlando, June, 1998.

USOC Olympic Congress, Phoenix, Arizona. November, 1998.

Australian International Symposium on Analytical Science. Melbourne, Australia. July, 1999.

Australian Sports Medicine Association, Sydney, Australia. July, 1999.

American Medical Society for Sports Medicine, San Diego, March, 2000.

American College of Sports Medicine, Indianapolis, May, 2000.

The Endocrine Society, Toronto, Canada, June, 2000.

American Orthopedic Society for Sports Medicine, Los Angeles, March, 2002.

British Medical Association, London, UK, April, 2002.

American Association for the Advancement of Science (AAAS) Current Pharmacological Doping Methods and Banned Substances. Seattle, WA, February 2004.

International Association of Horseracing Chemists and Veterinarians, Dubai, UAR March, 2004.

American Society of Andrology. Use, Abuse, and Addiction to Anabolic Steroids. Baltimore, MD, April 2004.

American College of Sports Medicine. Indianapolis, IN, June 2004.

The Endocrine Society - Science Writers Conference. New York, NY, December 2005.

Neutracon Supplement Meeting. February 2006

Annual Meeting of American Society of Clinical Pathologists, Las Vegas, Nevada, October 2006

World Boxing Council - April, 2007 Cancun Mexico.
Title: Use, Abuse, and Addiction to Anabolic Steroids.
Title 2: Role of blood doping and erythropoietins in sport.

INVITED LECTURES: INTERNATIONAL AND NATIONAL, since 1990 (continued)

Saratoga Institute on Racing and Gaming Law, Albany Law School, August 7, 2007
Title: The Human Testing Experience Applied to Testing Race Horses.

INVITED LECTURES: UCLA AND CALIFORNIA, since 1990

California State Department of Health Services: Public Health Grand Rounds. March, 1990.

UCLA Neuropsychiatric Institute: Substance Abuse Focus Group. UCLA. May, 1990.

Symposium: Sports Alcohol and Other Drugs. Oakland, CA. October, 1990.

Grand Rounds. Childrens Hospital, Oakland, CA. August, 1990.

Pacific Interurban Clinical Club. Los Angeles, CA. November 3, 1990.

Obstretrics and Gynecology Endocrinology Seminar. UCLA. January, 1991.

California Society of Addiction Medicine. San Francisco, CA. October, 1991.

Los Angeles Police Commission. Los Angeles, CA. March, 1992.

Saint John's Hospital and Health Center. Santa Monica, CA. September, 1992.

California Society of Addiction Medicine. Anaheim, CA. November, 1992.

Obstretrics and Gynecology Assembly of Southern California. Los Angeles, CA. February, 1993.

World Cup Soccer, Federation International Football Association. Los Angeles, CA. April 1994.

UCLA School of Medicine - Interdepartmental Conference. UCLA. May, 1994.

Grand Rounds, Hoag Memorial Hospital, September, 1995.

Harbor-UCLA Endrocrine Grand Rounds, October, 1995.

Wadsworth Veterans Administration, Endocrinology Grand Rounds, March, 1996.

Division of Family Practice, UCLA, October, 1996.

Harbor-UCLA Endocrine Grand Rounds, April, 1998.

INVITED LECTURES: UCLA AND CALIFORNIA, since 1990 (continued)

UCLA School of Medicine, Grand Rounds, June, 2002.

Solvay Course on Androgens Manhatten Beach, April, 2003.

American Association for the Advancement of Science, Seattle, February, 2004.

UCLA Department of Pediatrics, Endocrinology, Grand Rounds, October, 2004.

UCLA-Wadsworth, Department of Endocrinology, Grand Rounds, January, 2005.

Amgen, Thousand Oaks, CA. Drugs and Sports, Special Seminar, Internal video to all Amgen sites. December 2006

California Society of Addiction Medicine, State of the Art Conference, October, 2007
Title: The Pharmacology and Testing of Enhanced Athletic Performance.

California Los Verdes Mens Club, October, 2007.
Title: Can cheaters be stopped?

Manatt Law Firm. CLE: Drugs, Sport, and the Law. Internal video to all Manatt offices.
January 11, 2008

SEMINARS & SYMPOSIA ORGANIZED AND PRESENTED, since 1989

Chairperson and Principal Speaker: CME Course on Drugs in Sport for Physicians associated with United States Olympic Committee.
UCLA Medical Center, Los Angeles, CA. May 1989.

Second Permanent World Conference on Drugs in Sport.
Member of Organizing Committee
Moscow, USSR. September, 1989.

Department of Defense
Two day seminar on Anabolic steroids.
The Pentagon, November 16-17, 1990.

United States Olympic Committee (USOC).
Chair UCLA CME Course on Drugs in Sport for Physicians.
Colorado Springs, Colorado. May 18-20, 1991.

Third Permanent World Conference on Drugs in Sport.
Member of Organizing Committee and Speaker
Bergen, Norway. September 20-26, 1991.

SEMINARS & SYMPOSIA ORGANIZED AND PRESENTED, since 1989

United States Olympic Committee.
Co-Chair UCLA CME course on Drugs, Athletes, and Testing.
Colorado Springs, CO. March 10-12, 1993.

Fourth Permanent World Conference on Drugs in Sport.
Member of Organizing Committee and Speaker
London, England. September 4-8, 1991.

United States Olympic Committee.
Co-Chair CME course on Drugs, Athletes, and Testing.
Colorado Springs, CO. June 3-5, 1994.

United States Anti-Doping Agency.
Co-Sponsor Conference on Carbon Isotope Ratio Techniques
Los Angeles, CA. August, 2003.

PRINCIPAL CONSULTANT TO MAJOR SPORT EVENTS:

Summer Olympic Games of Los Angeles, 1984
Director of Laboratory

World University Games.
Buffalo, NY. 1991-1993.

Goodwill Games, Member of Medical Commission
Seattle, Washington 1990.
Director of Laboratory

Summer Olympic Games of Seoul, 1988
Pan American Games, Member of Medical Commission
Havana, Cuba July 1991.

Winter Olympic Games of Albertville, 1992.
Member of Medical Commission
Albertville, France. 1991-1992.

Summer Olympic Games of Barcelona, 1992.
Member of Medical Commission
Barcelona, Spain. 1990-1992.

Americas Cup Race, 1992, San Diego, CA. 1992.

PRINCIPAL CONSULTANT TO MAJOR SPORT EVENTS (continued):

Central American and Caribbean Games
Member of Medical Commission
Director of Laboratory/Transfer of Accreditation
San Juan, Puerto Rico 1992-1993.

Winter Olympic Games of Lillehammer, 1994
Member of Medical Commission
Lillehammer, Norway. 1991-1992.

World Cup Soccer, FIFA, Director of Laboratory
United States, 1991-1994.

Goodwill Games, St. Petersberg, Russia 1994.

Olympic Games of Atlanta, 1996
Atlanta, Georgia. 1992-1996.
Director of Steroid Testing Laboratory

Winter Olympic Games of Nagano, 1998
Member of IOC Medical Commission
Nagano, Japan

Summer Olympic Games of Sydney, 2000
Member of IOC Medical Commission
Sydney, Australia

Winter Olympic Games of Salt Lake, 2002
Member of IOC Medical Commission
Director of Laboratory

Summer Olympic Games of Athens, 2004
Member of IOC Medical Commission

Winter Olympic Games of Torino, 2006
Member of IOC Medical Commission

Summer Olympic Games of Beijing, 2008
Member of IOC Medical Commission

SPORT CONSULTATIONS ON LEGAL MATTERS

CASES INVOLVE TESTING AND MEDICINE, since 1990 (continued)

United States Olympic Committee National Governing Sport Bodies: 1984-2001.

Principal consultant from 1984 - 1999
Examples:
Slaney vs IAAF

United States Anti-Doping Agency
Principal consultant from inception of Agency in 2000 until 2007
Examples:
USADA v. Gatlin
USADA v. Tammy Thomas
USADA v. Jovanovich
USADA v. Chamber
USADA v. Landis

International Olympic Committee, Court of Arbitration for Sport

Arbitral Award: CAS 2002/A/370 LAZUTINA v/ IOC
Arbitral Award: CAS 2002/A/374 MUEHLEGG v/ IOC
Arbitral Award: CAS 2002/A/376 BAXTER v/ IOC
Arbitral Award: CAS 2002/A/389-393 Austrian Ski Team v/ IOC
Arbitral Award: CAS 2004/xxxxx ZACHARY LUND v/ IOC
Arbitral Award: CAS 2007/A/1286/ JOHANNES EDER v/ IOC
Arbitral Award: CAS 2007/A/1288/ MARTIN TAUBER v/ IOC
Arbitral Award: CAS 2007/A/1289/ JURGEN PINTER v/ IOC

United States Department of Justice

Balco cases: two Grand Jury appearances
Performed chemistry analysis for several cases
Known pending case: United States v Thomas, Case 06-0803 SI

Chambers vs. UK Athletics: Tetrahydrogestrinone, 2004.

National Football League, various, 1989 - 2006

National Collegiate Athletic Association 1986-2006

Supplement Superdrol (methasterone) causes severe hepatic & renal failure in two young men
Att: Lawrence Cook

Supplement 5HTP alleged to contain peak X, a toxins. Maker: Neutraceutical Corporation

PUBLICATIONS:

1. Powell DW, Plotkin GR, Maenza RM, Solberg LI, Catlin DH, Formal SB. Experimental diarrhea I. Intestinal water and electrolyte transport in rat salmonella enterocolitis. Gastroenterology 1971;60:1053-1064.

2. Powell DW, Plotkin GR, Solberg LI, Catlin DH, Maenza RM, Formal SB. Experimental diarrhea II. Glucose-stimulated sodium and water transport in rat salmonella enterocolitis. Gastroenterology 1971;60:1065-1075.

3. Powell DW, Solberg LI, Plotkin GR, Catlin DH, Maenza RM, Formal SB. Experimental diarrhea III. Bicarbonate transport in rat salmonella enterocolitis. Gastroenterology 1971; 60:1076-1086.

4. Adler FL, Liu CT, Catlin DH. A rapid serological screening test for morphine. Abstracts of Federation Proceedings, 1972.

5. Catlin DH, Cleeland R, Craves F, Grunberg E. A rapid and sensitive radioimmunoassay for detection of morphine in urine and serum. Abstracts of the American Public Health Association Meeting, 1972.

6. Adler FL, Liu CT, Catlin DH. Immunological studies on heroin addiction I. Methodology and application of a hemagglutin-ation inhibition test for detection of morphine. Clin Immununol Immunopathol 1972;1:53-68.

7. Catlin DH, Cleeland R, Grunberg E. A sensitive, rapid radioimmunoassay for morphine and immunologically related substances in urine and serum. Clin Chem 1973;19:216-220.

8. Catlin DH, Adler FL, Liu CT. Immunological studies on heroin addiction II. Applications of a sensitive hemagglutination-inhibition test for detecting morphine to diagnostic problems in chronic heroin addiction. Clin Immunol Immunopathol 1973;1:446-455.

9. Catlin DH. Urine testing: A comparison of five current methods for detecting morphine. Am J Clin Pathol 1973; 60:719-728.

10. Catlin DH. A Guide to Urine Testing for Drugs of Abuse. Washington, DC: U.S. Government Printing Office, 1973.

11. Catlin DH. Evaluation and clinical application of the immunoassays for morphine. In: Sunshine I, Mule SJ, Braude MC, eds. Immunoasssays for Drugs Subject to Abuse. Cleveland: CRC Press, 1974.

PUBLICATIONS (Continued):

12. Gorodetsky CW, Angel CR, Beach DJ, Catlin DH, Yeh S. Validity of screening methods for drugs of abuse in biological fluids. I. Heroin in urine. Clin Pharmacol Ther 1974; 15:461-472.

13. Catlin DH, Jenden DJ. Estimation of morphine in biological samples by immunoextraction and GC/MS. Abstracts International Congress of Pharmacology, 6th Proceeding, Helsinki, Finland, 1975.

14. Catlin DH, Schaeffer JC, Fischer JF. Production and characterization of antibodies to meperidine. Res Commun Chem Path Pharmacol 1975;11:245-256.

15. Clausen JL, Hill RN, Liewen MB, Catlin DH. Arterial and venous lidocaine levels during anesthesia of upper and lower airways. Clin Res 1976; 24:159A.

16. Catlin DH, Schaeffer JC, Liewen MB. 2-Diazomorphine directed anti-serum: Determination of morphine in brain after naloxone challenge in morphine pellet implantation in mice. Life Sci 1977;20:123-132.

17. Catlin DH, Liewen MB, Schaeffer JC. Brain levels of morphine in mice following removal of a morphine pellet and naloxone challenge: No evidence for displacement. Life Sci 1977; 20:133-139.

18. Catlin DH. Pharmacokinetics of morphine by radioimmunoassay: The influence of immunochemical factors. J Pharmacol Exp Ther 1977;200:224-235.

19. Dum J, Meyer G, Hollt V, Herz A, Catlin DH. Inability of naloxone to change morphine brain levels in tolerant mice. Eur J Pharmacol 1977;46:165-170.

20. Catlin DH, Hui KK, Loh HH, Li CH. Pharmacologic activity of beta-endorphin in man. Commun Psychopharmacol 1977;1:493-500.

21. Catlin DH, Hui KK, Loh HH, Li CH. Beta-endorphin: Subjective and objective effects during acute narcotic abstinence in man. Adv Biochem Psychopharmacol 1978;18:341-350.

22. Catlin DH, George R, Li CH. Beta-endorphin: Pharmacologic and behavioral activity in cats after low intravenous doses. Life Sci 1978;23:2147-2154.

23. Gorelick DA, Catlin DH, George R, Li CH. Beta-endorphin is behaviorally active in rats after chronic intravenous administration. Pharmacol Biochem Behav 1978;9:385-386.

24. Catlin DH, Hui KK, Loh HH, Li CH. Beta-endorphin: Initial clinical studies. In: Usdin E, Kline NS, Bunney WE Jr, eds. Endorphins in Mental Health Research. New York: MacMillan Press, 1979, pp. 535-544.

PUBLICATIONS (Continued):

25. Hui KK, Catlin DH, Conolly ME, Li CH. Human beta-endorphin, cyclic AMP and the human lymphocyte beta-adreno-receptor. World Conference on Clinical Pharmacology and Therapeutics, London, August 3-9, 1980. (Abstract)

26. Catlin DH, Gorelick DA, Gerner RH, Hui KK, Li CH. Clinical studies with human beta-endorphin. In: Beers RF, Bassett EG, eds. Polypeptide Hormones, No. 12. New York: Raven Press, 1980:337-346.

27. Catlin DH, Gorelick DA, Gerner RH, Hui KK, Li CH. Clinical effects of beta-endorphin infusions. Adv Biochem Psychopharmacol 1980;22:465-472.

28. Catlin DH, Poland RE, Gorelick DA, Gerner RH, Hui KK, Rubin RT, Li CH. Intravenous infusion of beta-endorphin increases serum prolactin, but not growth hormone or cortisol in depressed subjects and withdrawing methadone addicts. J Clin Endocrinol Metab 1980; 50:1021-1025.

29. Bajorek JC, Catlin DH, Lomax P. Anticonvulsant activity of beta-endorphin in the seizure sensitive mongolian gerbil. Society for Neurosciences, Cincinnati, Ohio. November, 1980. (Abstract)

30. Gerner RH, Catlin DH, Gorelick DA, Hui KK, Li CH. Beta-endorphin: Intravenous infusion causes behavioral change in psychiatric in-patients. Arch Gen Psychiatry 1980;37:642-647.

31. Catlin DH, Smith RA, Samuels AI. ^{14}C-Ribavirin: Distribution and pharmacokinetic studies in rats, baboons, and man. In: Smith RA, Kirkpatrick W, eds. Ribavirin: A Broad Spectrum Antiviral Agent. New York: Academic Press, 1980, pp. 83-98.

32. Robinson JS, Catlin DH, Barrett CT. Withdrawal from methadone by breast feeding. In: Stern L, ed. Intensive Care in the Newborn. New York: Masson Publishers, 1980, pp. 213-218.

33. Gerner RH, Gorelick DA, Catlin DH, Li CH. Behavioral effects of beta-endorphin in depression and schizophrenia. In: Shah NS, Donald AG, eds. Endorphins and Opiate Antagonists in Psychiatric Research: Clinical Implications. New York: Plenum Press, 1980.

34. Catlin DH, Gerner RH, Gorelick DA. Beta-endorphin: Behavioral effects of single and multiple infusions - Measurement of CSF levels. Third World Congress of Biological Psychiatry, Stockholm, Sweden, 1980; S56 (Abstract).

35. Gorelick DA, Catlin DH, Gerner RH. Beta-endorphin studies in psychiatric patients. In: Emrich HM, ed. Modern Problems in Pharmacopsychiatry, Vol 17. Basel, Switzerland: S. Karger, 1981:236-245.

PUBLICATIONS (Continued):

36. Catlin DH, Gorelick DA, Gerner RH. Studies of beta-endorphin in patients with pain and drug addiction. In: Li CH, ed. Hormonal Proteins and Peptides, Vol 10. New York: Academic Press, 1981:311-338.

37. Bajorek JG, Lee RJ, Catlin DH, Lomax R. Effects of beta-endorphin on experimentally induced seizures in mice. Proc West Pharmacol Soc 1981;24:315-317.

38. Catlin DH, Gorelick DA, Gerner DH. Clinical pharmacology of beta-endorphin in depression and schizophrenia. In: Verebey K, ed. Annals of the New York Academy of Sciences. New York: Academy of Sciences, 1982:434-447.

39. Gerner RH, Gorelick DA, Catlin DH, Sharp B. Endorphins: CSF levels and multidose studies in psychiatric subjects. In: Perris C, Struwe G, Jansson B, eds. Biological Psychiatry 1981. Elsevier: North Holland Biomedical Press, 1981:386-389.

40. Gerner RH, Sharp B, Catlin DH. Peripherally administered beta-endorphin increases cerebrospinal fluid endorphin immunoreactivity. J Clin Endocrinol Metab 1982;55:358-360.

41. Catlin DH. Pharmacokinetics. In: Bevan JA, Thompson JH, eds. Essentials of Pharmacology, 3rd ed. New York: Harper and Row, 1983:46-61.

42. Catlin DH. Opioids: Agonists, antagonists, and mixed antagonist-agonists. In: Bevan JA, Thompson JH, eds. Essentials of Pharmacology, 3rd ed. New York: Harper and Row, 1983:318-330.

43. Strauss RH, Wright JE, Finerman GAM, Catlin DH. Side effects of anabolic steroids in weight-trained men. Physician and Sports Medicine 1983; 11:87-96.

44. Batzdorf U, Catlin DH. Pain syndromes in malignant disease. In: Haskell CM, ed. Cancer Treatment, 2nd ed. New York: W.B. Saunders, 1985:928-940.

45. Wright J, Bahrke M, Strauss R, Catlin DH. Psychological states, behavioral changes and somatic perception accompanying anabolic steroid usage. American College of Sports Medicine, 1985. (Abstract).

46. Strauss RH, Catlin DH, Morgan JP, Murphy RJ, Murray TH, Puffer JC, Voy RO. Drug testing in sports: A round table. Physician and Sports Medicine 1985;13:69-82.

47. Catlin DH. Detection of drug use by athletes. In: Strauss R, ed. Drugs and Performance in Sports. New York: W.B. Saunders, 1987:103-120.

PUBLICATIONS (Continued):

48. Catlin DH, Hatton CK. Clinical pharmacology of androgenic anabolic steroids (AAS) in sport. Acta Pharmacol et Toxicol 1986 (Suppl V)(Abstract 16).

49. Catlin DH, Hatton CK. Identification of boldenone, a veterinarian androgenic anabolic steroid, in the urine of bodybuilders. Acta Pharmacol et Toxicol 1986 (Suppl V) (Abstract 349).

50. Kammerer RC, Merdink J, Jagels M, Hui K, Catlin DH. Fluoxymesterone metabolism in man. 192nd American Chemical Society Meeting, Anaheim, California, September, 1986. (Abstract).

51. Catlin DH. Adverse effects of blood transfusions. Olympic Review 1987; 231:37-41.

52. Catlin DH, Kammerer RC, Hatton CK, Sekera MH, Merdink JM. Analytical chemistry at the Games of the XXIIIrd Olympiad in Los Angeles, 1984. Clin Chem 1987;33:319-327.

53. Hatton CK, Catlin DH. Detection of androgenic anabolic steroids in urine. Clinics in Laboratory Medicine 1987;7:655-668.

54. Elliot DL, Goldberg L, Kuehl KS, Catlin DH. Characteristics of anabolic-androgenic steroid-free competitive male and female bodybuilders. Physician and Sports Med 1987; 15:169-179.

55. Hatton CK, Catlin DH. Urinary steroid profiles of athletes. 35th American Society Mass Spectrometry, Denver Colorado, May 24-29, 1987. (Abstract).

56. Barriere SL, Orlando PL, Catlin DH. Pharmacokinetic disposition and pharmacodynamic effects of IV Ciprofloxacin (C) and Azlocillin (A) given alone and in combination to healthy subjects. Abstracts of the 1988 ICAAC, 1988:245 (Abstract 768).

57. Catlin DH and Hatton CK. Introduction to and use of frequency distributions to distinguish between urinary 19-norandrosterone arising from the administration of norethisterone or that of 19-norestosterone. First International Symposium on Drugs in Competitive Athletics, Brioni, May 29-June 2, 1988. (Abstract).

58. Catlin DH. Drugs in competitive athletics. First International Symposium on Drugs in Competitive Athletics, Brioni, May 29-June 2, 1988. (Abstract).

59. Brower KJ, Eliopulos GA, Blow FC, Catlin DH, Beresford TP. Evidence for physical and psychological dependence on anabolic-androgenic steroids in eight weight lifters. Am J Psychiat 1990;147:510-512.

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Topic: Profile of Catlin

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Topics: Drugs in baseball, Bonds, testing, Selig, Schilling, Patrick Arnold

New York Times 29 July 2007 Author: Juliet Macur
Topic: why do athletes dope?

Science Journal:Analytical Chemistry August 2007 Raj Mukhopadhyay
Topic: Analytical Chemistry plays a key role in Unmasking Athletes who take Performance-Enhancing Drugs (Catlin and others).

Kansas City Star July 31, 2007 Interviewer: Sam Mellinger
Topic: Bonds, Baseball, Selig, and our grant for hGH

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Tom Goldman Listen http://www.npr.org/templates/story/story.php?storyId=17390477
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Radio24-IlSole24Ore, An italian national news radio broadcast. Milano, Italy
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MEDIA ARTICLES FOCUSED ON CATLIN (Partial listing since 6/2005)

XM Radio January 18, 2008 Brent Gambill
Topic: The latest on Anti-Doping Research

National Public Radio, New York February 15, 2008 Leonard Lopate
Topic: human Growth Hormone and other drugs

EXHIBIT 4

ORIGINAL

GRAND JURY 03-1

NORTHERN DISTRICT OF CALIFORNIA

GJ INVESTIGATION NO. 2020R01596)

DCN: NO. 411-4013)

CONFIDENTIAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

TESTIMONY OF DON H. CATLIN, M.D.

AT UNITED STATES DISTRICT COURT

450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

THURSDAY, OCTOBER 23, 2003, 2:00 PM

FOR THE GOVERNMENT:

KEVIN V. RYAN

UNITED STATES ATTORNEY

BY: JEFFREY NEDROW

ASSISTANT U.S. ATTORNEY

U.S. DEPARTMENT OF JUSTICE

450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

THURSDAY, OCTOBER 23, 2003, 2:00 PM

DON H. CATLIN, M.D.,

having been duly sworn, testified as follows:

EXAMINATION

BY JEFF NEDROW:

Q. Sir, please have a seat. And if you could state your name and spell your last name for the record, please.

A. I am Don H. Catlin, C-a-t-l-i-n.

Q. Dr. Catlin, good afternoon, sir. For whom do you work?

A. I work for the University of California Los Angeles, UCLA.

Q. And what is it that you do at UCLA?

A. My formal university title is Professor of Molecular Medical Pharmacology. I am a member of that department at UCLA. And I am also director of the UCLA Olympic Analytical Laboratory, which is a laboratory that I operate at UCLA.

Q. Dr. Catlin, please describe your educational background that led to this position at UCLA?

A. I went to Yale University, graduated in 1960. And then -- then I went to the University of Rochester Medical School. And then I had a tour of duty and was a major in the armed forces. And then I started training -- see, I am a little bit off. I did my medical training and internship and residency at UCLA and Vermont. One year at University of Vermont. And then I had three years at Walter Reed in Washington, D.C. And then I took a formal job as an assistant professor at UCLA Los Angeles, where I have been ever since. That was 1972.

Q. And that was an assistant professorship in the medical school at UCLA?

A. Yes.

Q. Since then, you are, in addition to directing the drug lab, a full professor at the UCLA medical school now; correct?

A. That's correct.

Q. In the 1980s -- well, prior to 1982, approximately, what kind of areas did you pursue as a part of your medical career? What areas were you involved with?

A. When I was at Walter Reed I was interested -- involved in some drug research. I was interested in people who were taking heroin, methadone and those kind of things. I was living in Washington, D.C., so I learned a fair amount about the epidemic of hard drug abuse in the inner city, and I got interested in that.

When I left Walter Reed and came to UCLA, I started a research program in that area. And at that time I was also appointed in the Department of Medicine. I have an M.D., a practicing physician, so I was seeing patients. And that went along for about 10 years.

And Mr. Uberrothe and the Olympics came to Los Angeles, so they were coming, and they were looking for a laboratory to do drugs and sport testing. And they came to me, I suppose, because I had been writing some papers about testing urine for drugs, and publishing them. And the Olympic people were looking for a university laboratory to set up a testing lab, so they came to me.

Q. And what happened in connection with their request?

A. A real long story short is, we took it. But at first I said no. They showed me this list of drugs, and although I was a practicing physician, I had never used many of them. They were things like stenozolol, and steroids, and things that we don't use in everyday conventional medicine. And I was particularly interested in this long list of drugs, because I should know about them, being a physician. But I really didn't. And what bothered me was that this was on an IOC list of banned substances. Athletes were not to take them.

And so, I set out to educate myself on what they were and why athletes would take them. It just didn't make any sense to me that an athlete, who is at the peak of their career, if you will, in a sport, would take a drug. Why? Well, I learned.

Q. And we are going to talk about that, but let me clarify a couple of things. What does IOC stand for?

A. IOC, it stands for the International Olympic Committee. Their headquarters is in Switzerland. They are the mother Olympic committee, if you will; and all national Olympic committees relate to them. In the United States we have the United States Olympic Committee and in Canada it would be the Canadian, and so forth. And the IOC is the committee that covers all of them. And all the national Olympic committees have to obey the rules of the International Olympic Committee.

Q. What year was this approximately that you were approached by Mr. Uberrothe and the Olympic people to start this drug lab?

A. I remember quite well. It was December '81. And actually, it wasn't Mr. Uberrothe, it was an IOC person came to me. And they were looking for somebody to set up a lab.

Q. What made you change your mind and say yes, to

000141

take on this assignment?

A. Well, I was a struggling young professor and I didn't have much equipment, and it looked to me like a lot of work. But I didn't quite understand what they were willing to pay for this. They ended up paying close to $2 million, which nobody ever thought about in those days. It was a lot of money; you could buy research equipment. So they ended up outfitting my laboratory, which didn't have so much. And they made it a real world class lab, because the Olympics wanted everything done right.

And I spent the next two or three years learning an awful lot about mass spectrometry and drug testing and reading, and I just went right straight through from one end to the other and built a lab. Frankly, I thought that after the games we would stop the work and I would go back to my usual work. But I became interested in it.

And it was quite amazing. After the Olympic games in '84, I had no business. There was no business. Nobody was buying our tests, so I kind of closed the lab. The following year in '85, things began to really move, and there were a number of incidents of drugs in sports and names, and suddenly everybody wanted testing. So we reopened and started doing testing for the Olympic Committee. And then the following year the NCAA came to us. And then the following year the National Football League, and so forth and so on. And it has been going every since.

Q. Okay. And you sort of anticipated my next question. Can you tell us who your clients currently are as of 2003?

A. Yes. They are, the three main clients in this country are: the National Football League; the National Collegiate Athletic Association; and the USOC, as represented by USADA, United States Anti-Doping Agency.

We also do work for the US Department of Defense, and we do some colleges and universities. I do testing for my own university, UCLA, and a few others. But our main clients, those that supply the bulk of the samples, are the big three that purchase tests in the United States.

Q. Can you describe for us the protocol your lab uses to ensure the integrity of the samples that you receive and how the testing procedure works?

A. Yes. Well, if you can imagine, this is a very litigenous area, and it has become more so as the years go along.

The athlete is tested at some site -- not at our lab, at the venue where the event takes place -- and the athlete gives a urine sample under observation. There is an observer there that actually watches the urine get into the bottle. And then that bottle is divided into two portions, an "A" and a "B." And it is sealed, and everybody observed and signs that it was collected correctly and sealed correctly.

And then it goes into the chain of custody. It is released to someone like Federal Express, who will bring it to us. And my lab will take custody at the door. We sign for it. And then we are responsible for the bottles throughout their sojourn through our lab.

And we do testing for all the drugs on the IOC list; that is, steroids, diuretics, stimulants, and others. And we test the "A" sample. We only open the "A" sample. When we get the bottles, we get "A" and "B." The "B" we put away; the "A" we open. And if we find a drug in the "A," then we report that result to the client. And we take the "B" bottle, and put it in an ultra-safe refrigerator, because the next step is the sport that gets our report, just the number, they can break the code and find out that sample 123456 belongs to John Jones, and they then notify the athlete. And the athlete is given a date to come to my lab, and be present while we open his "B" bottle which has been preserved. It hasn't been touched throughout this whole procedure.

So, the "A" bottle we open and work with. The "B" bottle is the same urine, but it has been preserved. And so, when the athlete comes in, we can show them the "B" bottle. We can show them where they signed that the chain of custody is intact, and everybody agrees that it is intact. Or if for some reason when it isn't, we sort that out. And then we open the "B" bottle, and we retest it. Now that may well be done in the presence of an attorney that is hired by the athlete to come and observe, or a chemist or some expert. So our lab opens its door to these experts to come and witness what is called the "B" confirmation.

In the last few days we are going through "B" confirmations at my laboratory, and because there is some important names, attorneys are there and chemists are there to observe us while we do our work. And the observers are able to stay all day and all night while we do our work, and watch us do it, so that they can be satisfied that we performed the tests properly and correctly.

Q. Why is it that that system has built in so many safeguards and assurances and double checks in the manner that you have described? Why have you built those into your system?

A. We built it into the system -- it is not just me, it is the International Olympic Committee and people concerned with this -- it is the basic rights of an athlete, because actually the "A" and "B" sample goes back to the early day in sports when there was the old Soviet Block and the East Germans, and versus the Americans, if you will. And the "A" bottle and the "B" bottle were created so that you could have a separate analysis and everybody could be around and watch it. You could have an East German and an American and an Asian all watching the "B" analysis and all being able to say that it's a true and truthful record of what went on, and the bottle was intact and clean.

So, it starts back with the old days of the Cold War. And it has just been preserved because there are features of it that is useful. It is a very airtight system. And there has been many, many attempts by attorneys to break it down, and it doesn't break down. It works. It is expensive, but it works.

Q. And when you say it works, in your experience it has been accurate?

A. Yes.

Q. A couple of other questions about the evolution of your lab. At the time you took on this assignment of starting the UCLA Olympic Lab, were you aware or were you informed at the time what problems were associated with the Olympic movement that led to the need in the United States to create this kind of lab?

A. No. I was aware just -- I really wasn't aware much of drugs in sport. I went to the library and read about it, and got a little bit. I had been told that there were such labs. There was one in Germany and one in the United

Kingdom, but never one in the United States. And I had been told that a lot of the sport federations didn't want to have major competitions in the United States because there was no testing. And sport people wanted testing. So, it was time, if you will, for the US to have a lab. And I just happened to be in the right place at the right time, if you want to call it that, to be at a university and able to get it started and doing it.

As I say, I really thought I would just do it and go back to being a doctor. It didn't work that way.

Q. And at that time, were there any other labs in the United States doing this kind of work?

A. No.

Q. And now, 21 years later and in 2003, you are still doing this work; correct?

A. Yes. The lab has been there. It has been growing or, if you will, our business side has really developed. It is just because the drug and sport movement has developed. We used to do 2,000 samples a day -- a year. Now we do about 22,000. And the list of drugs has grown. And it is more varied list, Erythropoietin and growth hormones and other things are added to the list. So, we have grown with the drug and sport industry, if you will.

Q. As of 2003, how would you summarize or characterize the mission of the lab?

you have seen picture of men with giant muscles and things. Those are from steroids.

Q. Okay. And are the matters you have described, the proof of these effects, are these anecdotal observations by you or are these matters that have been studied clinically or through research over the past several decades?

A. Oh, yes, these effects are well known. They are described in many scientific articles. The mechanism of how they happen is known. There are pictures. And the full pharmacology of these agents is pretty well known. It is very well known. There is no question about it.

Q. Okay. Have you had the opportunity to research or read any effects specifically on what can happen to juveniles or young people, anyway, who have contact with these types of steroids?

A. Yes. With juveniles, before their bones -- their bones close before they reach their full height. If they take anabolic steroids, it stunts their growth. Their bones don't close normally. Once their bones close and they become in their teens, then it doesn't change their final height. And young men and young women are susceptible to the same kinds of effect. Some people feel that they are more likely to get tumors and nasty side effects than full adults, but that is not all together perfectly clear.

You don't give these to young men or young

A. They had a steroid in them, which we called THG, tetrahydrogestrinone. And we had been working on this with USADA. I was working with USADA and had for three years.

I also had a relationship with Mr. Novitzky which I was sworn not to speak about. And it was USADA that handed me the syringe. This time I had no idea that they came from BALCO or there was any connection between these cases.

So, when I got the syringe from USADA, I started to work on it. And it was only after a few weeks -- I knew there was a federal investigation, and I knew it was in Northern California. And then it became clear from the USADA side that BALCO was involved. I knew BALCO. I knew the name Conte, because I follow sport. And suddenly one day last summer I realized that the federal investigation and the USADA investigation were really one and the same, but they didn't know it.

Q. And let me -- let me pause and ask you something, because we kind of went back, before Agent Novitzky sent you these samples you actually received -- this is Grand Jury Exhibit 10 we introduced last week -- you received actually a syringe from USADA which they had asked you to test; is that correct?

A. Correct.

Q. And does this appear to be actually the syringe you received from USADA?
A. Yes.
Q. And just briefly, did you learn from USADA how they came to get in possession of this syringe?
A. Yes. At that time we knew that it was -- that a coach, not by name but we knew a coach had told USADA. And somehow, I don't know, somehow the syringe was given to USADA and the coach was involved. And USADA, of course, gave the syringe to us.
And to us, it was an unknown. We didn't know what it was. That was our job to find out. Nobody says what it is in it. And it took us some some weeks, months to figure out the chemistry of what was in it. And finally, we figured out that it was THG.
So, by the time I got Mr. Novitzky's liquids, which was many weeks later, I was of course wondering whether it was THG. So when we analyzed Mr. Novitzky's liquids and they were THG, suddenly, you know, it was obvious that THG was coming from BALCO, made its way into the syringe and wherever else it was making its way.
Q. Okay. And you've described THG as a steroid. Can you please -- well, let me ask a couple of questions at the outset.
There is actually a list promulgated in the

Federal Criminal Code of several steroids which are outright prohibited; is that correct?

A. Yes.

Q. And testosterone is one of them?

A. Yes.

Q. Prohibited without, unless you have got a doctor's prescription or a valid medical purpose; correct?

A. Correct.

Q. Is THG on that list in the Federal Code?

A. No.

Q. Why not?

A. Well, it's a designer steroid. It is brand new. It has never been made before. It is not in any book. You cannot find it in any reference source.

When we finally figured out its structure, I was able to go to these mammoth libraries of chemistry and search for it by its chemical structure. Nothing came up. Never before had it been reported or described or pictured or published. Nothing, absolutely nothing was known about it.

I knew I could draw a picture of it, and I had made some in my own lab.

My first job was to take that material and do a lot of work -- really, six or eight works of hard chemistry -- and I could finally draw the molecule, I was pretty sure, on a piece of paper. And I knew that I was drawing the right molecule.

But to prove it beyond a shadow of a doubt, I had to make it. So we went into our lab and we synthesized it from scratch. And now I had one vial of THG that I made. And I had the THG in this material -- in this test tube. And I could show they were identical. That proved that they were one and the same material.

Then I had to develop a urine test so that I could detect it in urine, because THG was not detectable on our regular urine test. So that took another month or so. Finally, then, we tested some urine and found some.

So, by then the story was complete. THG was being made somewhere. It was somehow being distributed to some athletes. USADA and others were collecting their urine. And we were then able to test for it and reported some out as positive.

Q. And okay. So actually is it fair to say to your knowledge were you the first person to actually research and break down the substance and be able to define this substance called THG?

A. Oh, yes, I am sure we are. Well, somebody made it before us. I don't know who. But, so, and in that sense, no.

We are the first people to see it, and we will write about it when we get a minute. And we'll write a scientific article about what we did and how we did it.

Q. Now, can you tell from the composition of THG whether or not it even, if it is not previously identified, it has steroid-type effects?

A. Well, I can tell you what I know. The steroid known as gestrinone has been on the IOC list as a banned prohibited steroid. It has been on the list. It was put on the list some time ago. And that means that a committee of people decided that A, it was a steroid; and B, it enhanced performance; and C, it should be on the prohibited list. So, it was put on the list.

THG is a tetrahydro. That means four hydrogen has been added to gestrinone. So it is closely related. It is a small step away.

In a sport context, it could be an anabolic-related substance and it definitely would be banned.

It's anabolic effect, it has never been tested so nobody can tell you that. But somebody who has an understanding of pharmacology and drugs can look at it and say obviously it is a steroid. We would expect it to have this, this, this and this effect. There is no question in the minds of pharmacologists that it is a steroid.

There is no way you can go to a scientific publication and prove that. In fact, only one steroid has ever been proven to be performance enhancing and that is

EXHIBIT 5

GRAND JURY 04-1

NORTHERN DISTRICT OF CALIFORNIA

ORIGINAL

GJ INVESTIGATION NO. 2004R00608

REPORTER'S TRANSCRIPT OF PROCEEDINGS

TESTIMONY OF DON H. CATLIN

AT 450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

THURSDAY, JUNE 29, 2006

FOR THE GOVERNMENT:

KEVIN V. RYAN,

UNITED STATES ATTORNEY

BY: MATT A. PARRELLA, AUSA

JEFF NEDROW, AUSA

UNITED STATES DEPARTMENT OF JUSTICE

450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

THURSDAY, JUNE 29, 2006; 4:39 P.M.

THE FOREPERSON: Good afternoon.
THE WITNESS: Good afternoon.

(The witness was duly sworn.)

THE FOREPERSON: Thank you. Please be seated, and would you please state and -- state your name and spell your last name for the record.
THE WITNESS: I am Don H. Catlin, C-a-t-l-i-n.
THE FOREPERSON: Thank you.

DON H. CATLIN,

a witness called on behalf of the United States Grand Jury in and for the Northern District of California, having been duly sworn, testified as follows:

EXAMINATION

BY MR. PARRELLA:
Q. Thank you. Dr. Catlin, can you tell us how you're presently employed.
A. I work for the University of California at Los Angeles, UCLA.

Q. And what is your position there?
A. I am a professor of medical and molecular pharmacology, and I'm director of the UCLA Olympic Analytical Laboratory.
Q. Can you tell us what your educational background is, and could you include any certifications and licenses you hold...
A. I --
Q. ...in brief.
A. In brief. I went to Yale University and received a bachelor of arts degree. From there I went to the University of Rochester and received a medical degree and then I had five years of post-graduate training, internship and residency and focusing on internal medicine. I then received my board certification to practice medicine and a number of other certifications and then I went into the U.S. Army and Walter Reed Army Institute of Research and did three years of service as a major.
I then had completed my background and training and I took the position at UCLA as an assistant professor and eventually became a full professor as I am today.
Q. Thank you, sir. Is the UCLA Olympic

Analytical Laboratory certified in any way by any organizations?

A. Yes. It is certified to do drug testing of urine and blood for athletes by the WADA... That's the World Anti-Doping Agency, which was formed by the IOC. ...and it's certified by the A2LA, which is an accrediting body that inspects and looks at how we actually do our business; and we have some other lesser accreditations.

Q. And some of those accreditations deal with the -- the handling of specimens and your chains of custody and paperwork and things like that?

A. Yes. The WADA accreditation pays a great deal of attention to that.

Q. Okay.

A. There's a great big book that we have to follow.

Q. Okay. Very well. And can you tell us whether you have had to appear and testify and/or give information if not under test -- under oath regarding the testing of biological samples taken from athletes in, say, for example a suspension hearing or something.

A. Yes. Since my laboratory does testing